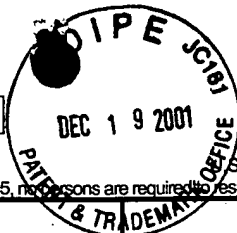


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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 1 of 2

Complete if Known

Application Number 09/876,375
Filing Date June 6, 2001
First Named Inventor Williams, John G.K.
Group Art Unit 4645 16 37
Examiner Name Teresa Stnelechia
Attorney Docket Number 020031-000820US

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U.S. PATENT DOCUMENTS

Examiner Initials *	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code ² (if known)			
	AA					
	AB					
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	AT					

FOREIGN PATENT DOCUMENTS

Examiner Initials *	Cite No. ¹	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		Office ³	Number ⁴	Kind Code ⁵ (if known)				
TS	AU	WIPO	WO 98/28440		PYROQUENCING	07-02-1998		
	AV							
	AW							
	AX							
	AY							

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Signature

Teresa Stnelechia

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¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 2 of 2

Complete if Known

Applicati n Number 09/876,375
Filing Date June 6, 2001
First Named Inv nt r Williams, John G.K.
Group Art Unit 4645-1637
Examiner Name Teresa Stnelechia
Attorney Docket Number 020031-000820US

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OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
TS	AZ	TYAGI ET AL. Molecular Beacons: Probes that fluoresce upon Hybridization. <i>Nature Biotechnology</i> , March 1996, Vol 14, Page 303-308.	
TS	AAA	FU ET AL. A DNA Sequencing Strategy that Requires only Five Bases of Known Terminal Sequence for Priming. <i>Proc. Natl. Acad. Sci. USA</i> , October 1995, VOL. 92, Pages 10162-10166.	
	ABB		
	ACC		
	ADD		
	AEE		
	AFF		
	AGG		
	AHH		
	AII		
	AJJ		

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Teresa Stnelechia

Date Considered

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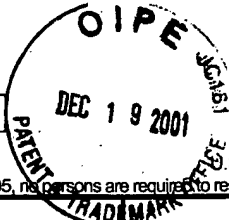
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 1 of 8

Complete if Known

Application Number 09/876,374 09/876,375
Filing Date June 6, 2001
First Named Inventor Williams, John G.K.
Group Art Unit 1637
Examiner Name Teresa Stuebel
Attorney Docket Number 020031-000810US

U.S. PATENT DOCUMENTS

Examiner Initials *	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
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	AB	4,458,066		Caruthers et al.	7/3/84	
	AC	4,863,849		Melamede	9/5/89	
	AD	4,962,037		Jett et al.	10/9/90	
	AE	4,996,143		Heller et al.	2/26/91	
	AF	5,013,831		Stavrianopoulos	5/7/91	
	AG	5,047,519		Hobbs, Jr. et al.	9/10/91	
	AH	5,241,060		Engelhardt et al.	8/31/93	
	AI	5,405,747		Jett et al.	4/11/95	
	AJ	5,608,063		Hobbs, Jr. et al.	3/4/97	
	AK	5,635,608		Haugland et al.	6/3/97	
	AL	5,714,330		Brenner et al.	2/3/98	
	AM	5,723,591		Livak et al.	3/3/98	
	AN	5,800,996		Lee et al.	9/1/98	
	AO	5,846,737		Kang	12/8/98	
	AP	5,866,336		Nazarenko et al.	2/2/99	
	AQ	5,863,727		Lee et al.	1/26/99	
	AR	5,872,243		Gee et al.	2/16/99	
	AS	5,260,433		Engelhardt et al.	11/09/93	
	AT	5,332,666		Prober et al.	07/26/94	
	AU	6,191,266	B1	Wang	2/20/2001	
	AV	6,210,891	B1	Nyren et al.	4/3/2001	
	AW	6,232,075	B1	Williams	5/15/2001	
	AX	6,287,821	B1	Shi et al.	9/11/2001	

FOREIGN PATENT DOCUMENTS

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		Office ³	Number ⁴	Kind Code ⁵ (if known)				
	AY	Europe	0272007	B1	Applied Biosystems, Inc.	03/04/92		

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Signature

Teresa Stuebel

Date
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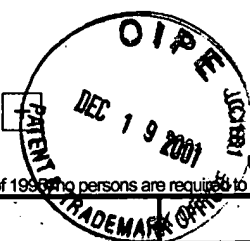
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet

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of

8

Complete if Known

Application Number

09/876,374 09/876,375

Filing Date

June 6, 2001

First Named Inventor

Williams, John G.K.

Group Art Unit

16 37

Examiner Name

Teresa Stnelechia

Attorney Docket Number

020031-000810US

FOREIGN PATENT DOCUMENTS

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		Office ³	Number ⁴	Kind Code ⁵ (if known)				
TS	AZ	WO	00/70073		Korlach et al.	11/23/2000		
	BA	WO	00/58507		Kleneman	10/05/2000		
	BB	WO	00/06770		Balasubramanian et al.	02/10/2000		
TS	BC	WO	00/27521		Balasubramanian et al.	05/18/2000		

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 3 of 8

Complete if Known

Applicati n Number	09/876,374-09/876,375
Filing Date	June 6, 2001
First Named Inv ntor	Williams, John G.K.
Group Art Unit	1637
Examiner Name	Teresa Stneleclia
Attorney Docket Number	020031-000810US

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
TS	BD	Agrawal <i>et al.</i> , "Site-Specific Functionalization of Oligodeoxynucleotides For Non-Radioactive Labelling," <i>Tetrahedron Letters</i> , 31:1543-1546 (1990)	
	BE	Ambrose <i>et al.</i> , "Single-Molecule Detection With Total Internal Reflection Excitation: Comparing Signal-to-Background and Total Signals in Different Geometries," <i>Cytometry</i> , 36:224-231 (1999)	
	BF	Araki <i>et al.</i> , "Allosteric Regulation of a Ribozyme Activity Through Ligand-Induced Conformational Change," <i>Nucleic Acids Res.</i> , 26:3379-3384 (1998)	
	BG	Armstrong <i>et al.</i> , "Interaction of Substrate Analogues with <i>Escherichia coli</i> DNA-Dependent RNA Polymerase," <i>Eur. J. Biochem.</i> , 70:33-38 (1976)	
	BH	Asanov <i>et al.</i> , "Regenerable Biosensor Platform: A Total Internal Reflection Fluorescence Cell with Electrochemical Control," <i>Anal. Chem.</i> , 70:1156-1163 (1998)	
	BI	Bergstrom <i>et al.</i> , "Palladium-Mediated Coupling between Organic Disulfides and Nucleic Acid Constituents," <i>JACS</i> , 111:374-375 (1989)	
	BJ	Bonnaffe <i>et al.</i> , "Potential Lipophilic Nucleotide Prodrugs: Synthesis, Hydrolysis, and Antiretroviral Activity of AZT and d4T Acyl Nucleotides," <i>J. Org. Chem.</i> , 61:895-902 (1996)	
	BK	Castro <i>et al.</i> , "Single-Molecule Detection of Specific Nucleic Acid Sequences in Unamplified Genomic DNA," <i>Anal. Chem.</i> , 69:3915-3920 (1997)	
	BL	Church <i>et al.</i> , "Multiplex DNA Sequencing," <i>Science</i> , 240:185-188 (1988)	
	BM	Davis <i>et al.</i> , "Rapid DNA Sequencing Based Upon Single Molecule Detection," <i>GATA</i> , 8(1):1-7 (1991)	
	BN	Eckstein <i>et al.</i> , "Phosphate Analogs for the Study of DNA Polymerases," <i>Methods in Enzymology</i> , 262:189-217 (1995)	
	BO	Edman <i>et al.</i> , "Conformational transitions monitored for single molecules in solution," <i>Proc. Natl. Acad. Sci. USA</i> , 93:6710-6715 (1996)	
	BP	Fleischmann <i>et al.</i> , "Whole-Genome Random Sequencing and Assembly of <i>Haemophilus influenzae</i> Rd," <i>Science</i> , 269:496-511 (1995)	
TS	BQ	Garcia, "Determination of Ion Permeability by Fluorescence Quenching," <i>Meth. Enzymol.</i> , 207:501-511 (1992)	

Examiner Signature	Teresa Stneleclia	Date Considered	5/9/02
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 4 of 8

Complete if Known

Applicant Number	09/876,374-09/876,375
Filing Date	June 6, 2001
First Named Inventor	Williams, John G.K.
Group Art Unit	1637
Examiner Name	Teresa Stnelechia
Attorney Docket Number	020031-000810US

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
TS	BR	Gebeyehu <i>et al.</i> , "Novel biotinylated nucleotide - analogs for labeling and colorimetric detection of DNA," <i>Nucleic Acids Research</i> , 15:4513-4535 (1987)	
	BS	Gibson <i>et al.</i> , "Synthesis and application of derivatizable oligonucleotides," <i>Nucleic Acids Research</i> , 15: 6455-6467(1987)	
	BT	Giusti <i>et al.</i> , "Synthesis and Characterization of 5'-Fluorescent-dye-labeled Oligonucleotides," <i>PCR Methods and Applications</i> , 2: 223-227 (1993)	
	BU	Goody <i>et al.</i> , "The Enzymatic Synthesis of Thiophosphate Analogs of Nucleotides," <i>Biochem. Biophys. Acta.</i> , 276:155-161 (1972)	
	BV	Grachev <i>et al.</i> , "ATP γ -Anilidate; A Substrate of DNA-Dependent RNA-Polymerase of <i>Escherichia Coli</i> ," <i>FEBS Lett.</i> , 49:163-166 (1974)	
	BW	Grachev <i>et al.</i> , "Studies on the functional topography of <i>Escherichia coli</i> RNA polymerase," <i>Eur. J. Biochem.</i> , 163:113-121 (1987)	
	BX	Griffin <i>et al.</i> , "Specific Covalent Labeling of Recombinant Protein Molecules Inside Live Cells," <i>Science</i> , 281:269-272 (1998)	
	BY	Gupta <i>et al.</i> , "A general method for the synthesis of 3'-sulfhydryl and phosphate group containing oligonucleotides," <i>Nucleic Acids Research</i> , 19:3019-3025 (1991)	
	BZ	Gyllensten <i>et al.</i> , "PCR-based HLA Class II Typing," <i>PCR Methods and Applications</i> , 1: 91-98 (1991)	
	CA	Haralambidis <i>et al.</i> , "Preparation of base-modified nucleosides suitable for non-radioactive label attachment and their incorporation into synthetic oligodeoxyribonucleotides," <i>Nucleic Acids Research</i> , 15: 4856-4876 (1987)	
	CB	Hobbs, "Palladium-Catalyzed Synthesis of Alkynylamino Nucleosides. A Universal Linker for Nucleic Acids," <i>J. Org. Chem.</i> , 54: 3420-3422 (1989)	
TS	CC	Hunkapiller <i>et al.</i> , "Large-Scale and Automated DNA Sequence Determination," <i>Science</i> , 254: 59-67 (1991)	

Examiner Signature	Teresa Stnelechia	Date Considered	5/9/02
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 5 of 8

Complete If Known

Applicati n Number	09/876,374 09/876,375
Filing Dat	June 6, 2001
First Nam d Inventor	Williams, John G.K.
Group Art Unit	1637
Examiner Name	Teresa Stneleclia
Attorney Docket Number	020031-000810US

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

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TS	CD	Hyman, "A New Method of Sequencing DNA," <i>Analytical Biochemistry</i> , 174:423-436 (1988)	
	CE	Jett <i>et al.</i> , "High-Speed DNA Sequencing: An Approach Based Upon Fluorescence Detection of Single Molecules," <i>J. Biomol. Struct. Dyn.</i> , 7:301-309 (1989)	
	CF	Kadokura, M. <i>et al.</i> , "Efficient Synthesis of γ -Methyl-Capped Guanosine 5'-Triphosphate as a 5'-Terminal Unique Structure of U6 RNA via a New Triphosphate Bond Formation Involving Activation of Methyl Phosphorimidazolidate Using ZnCl ₂ as a Catalyst in DMF under Anhydrous Conditions," <i>Tetrahedron Letters</i> , 38:8359-8362 (1997)	
	CG	Kinjo <i>et al.</i> , "Ultrasensitive hybridization analysis using fluorescence correlation spectroscopy," <i>Nucleic Acids Res.</i> , 23:1795-1799 (1995)	
	CH	Köster <i>et al.</i> , "A strategy for rapid and efficient DNA sequencing by mass spectrometry," <i>Nature Biotechnology</i> , 14:1123-1128 (1996)	
	CI	Kreimeyer <i>et al.</i> , "Transmembrane Transport of Adenosine 5'-Triphosphate Using a Lipophilic Cholesterol Derivative," <i>Angew. Chem. Int. Ed.</i> , 37:2853-2855 (1998)	
	CJ	Kreimeyer <i>et al.</i> , "Synthesis of Acylphosphates of Purine Ribonucleosides," <i>Tetrahedron Letters</i> , 37:8739-8742 (1006)	
	CK	Laws <i>et al.</i> , "Fluorescence Quenching Studies: Analysis of Nonlinear Stern - Volmer Data," <i>Meth. Enzymol.</i> , 210:448-463 (1992)	
	CL	Li <i>et al.</i> , "Design, Synthesis, and Spectroscopic Properties of Peptide-Bridged Fluorescence Energy-Transfer Cassettes," <i>Bioconjugate Chem.</i> , 10:241-245 (1999)	
	CM	Luo <i>et al.</i> , "Fluorous Mixture Synthesis: A Fluorous-Tagging Strategy for the Synthesis and Separation of Mixtures of Organic Compounds," <i>Science</i> , 291:1766-769 (2001)	
	CN	Marshall, "Rules for the visible absorption spectra of halogenated Fluorescein dyes," <i>Histochemical J.</i> , 7:299-303 (1975)	
TS	CO	Maxam <i>et al.</i> , "A new method for sequencing DNA," <i>Proc. Natl. Acad. Sci. USA</i> , 74: 560-564 (1977)	

Examiner Signature	Teresa Stneleclia	Date Considered	5/9/02
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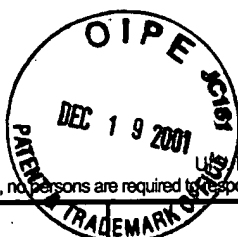
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Filing Date	June 6, 2001
First Nam d Invent r	Williams, John G.K.
Group Art Unit	1637
Examiner Name	Teresa Stneledia
Attorney Docket Number	020031-000810US

Sheet 6 of 8

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

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TS	CP	Narasimhan <i>et al.</i> , "p-Benzoquinone activation of metal oxide electrodes for attachment of enzymes," <i>Enzyme Microb. Technol.</i> , 7:283-286 (1985)	
	CQ	Nelson <i>et al.</i> , "Bifunctional oligonucleotide probes synthesized using a novel CPG support are able to detect single base pair mutations," <i>Nucleic Acids Research</i> , 17: 7187-7194 (1989)	
	CR	Nie <i>et al.</i> , "Probing Individual Molecules with Confocal Fluorescence Microscopy," <i>Science</i> 266:1018-1021 (1994)	
	CS	Nie <i>et al.</i> , "Real-Time Detection of Single Molecules in Solution by Confocal Fluorescence Microscopy," <i>Anal. Chem.</i> 67:2849-2837 (1995)	
	CT	Paris <i>et al.</i> , "Probing DNA sequences in solution with a monomer - excimer fluorescence color change," <i>Nucleic Acids Res.</i> , 26:3789-2393 (1998)	
	CU	Ronaghi <i>et al.</i> , "Sequencing Method Based on Real-Time Pyrophosphate," <i>Science</i> , 281:363-365 (1998)	
	CV	Sanger <i>et al.</i> , "DNA sequencing with chain-terminating inhibitors," <i>Proc. Natl. Acad. Sci. USA</i> , 74: 5463-5467 (1977)	
	CW	Sato <i>et al.</i> , "Bimane conjugates of 5-halogenouridylic acids as fluorogenic substrates for phosphodiesterase I," <i>J. Chem. Research (S)</i> , 1:390-391 (1994)	
	CX	Schecker <i>et al.</i> , "Flow-based continuous DNA sequencing via single molecule detection of enzymatically cleaved fluorescent nucleotides," <i>Proc. SPIE-Int. Soc. Opt. Eng.</i> 2386:4-12 (1995)	
	CY	Schmidt <i>et al.</i> "Imaging of single molecule diffusion," <i>Proc. Natl. Acad. Sci. USA</i> 93, 2926-2929 (1996)	
	CZ	Service, "Borrowing from biology to power the petite", <i>Science</i> , 283:27 (1999)	
TS	DA	Smagowicz <i>et al.</i> , "Properties of P ³ Esters of Nucleoside Triphosphates as Substrates for RNA Polymerase from <i>Escherichia coli</i> ," <i>Biochem.</i> , 20:5538-5546 (1981)	

Examiner Signature	Teresa Stneledia	Date Considered	5/9/02
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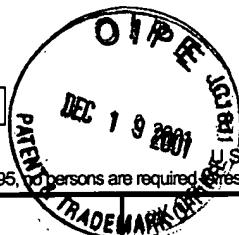
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Complete if Known

Applicant Number	09/876,374 09/876,375
Filing Date	June 6, 2001
First Named Inventor	Williams, John G.K.
Group Art Unit	1637
Examiner Name	Teresa Stnelechia
Attorney Docket Number	020031-000810US

Sheet 7 of 8

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TS	DB	Sproat <i>et al.</i> , "The synthesis of protected 5'-mercapto-2', 5'-dideoxyribonucleoside-3'-O-phosphoramidites; uses of 5'-mercapto-oligodeoxyribonucleotides," <i>Nucleic Acids Research</i> , 15:4837-4849 (1987)	
	DC	Steitz, "A mechanism for all polymerases," <i>Nature</i> , 391:231-232 (1998)	
	DD	Suto <i>et al.</i> , "Synthesis of γ -phosphate-linked Nucleoside Affinity Chromatography Resins For Protein Purification, Including Ribonucleoside Triphosphate Reductase," <i>Nucleosides & Nucleotides</i> , 17(8):1453-1471 (1998)	
	DE	Sverdlov <i>et al.</i> , "Derivatives of Guanosine Triphosphate-photoreactive Substrates of <i>Escherichia Coli</i> RNA Polymerase," <i>Elsevier/North-Holland Biomedical Press</i> , 112:296-298 (1980)	
	DF	Tokunaga <i>et al.</i> , "Single molecule imaging of fluorophores and enzymatic reactions achieved by objective-type total internal reflection fluorescence microscopy," <i>Biochem. and Biophys. Res. Comm.</i> , 235:47-53 (1997)	
	DG	Tyagi <i>et al.</i> , "Multicolor molecular beacons for allele discrimination," <i>Nature Biotechnol.</i> , 16:49-53 (1998)	
	DH	Velculescu <i>et al.</i> , "Serial Analysis of Gene Expression," <i>Science</i> , 270:484-487 (1995)	
	DI	Walker <i>et al.</i> , "Synthesis and Properties of Caged Nucleotides," <i>Methods in Enzymology</i> , 172:288-301 (1989)	
	DJ	Wang <i>et al.</i> , "Design and Synthesis of New Fluorogenic HIV Protease Substrates Based On Resonance Energy Transfer," <i>Tetrahedron Lett.</i> , 31:6493-6496 (1990)	
	DK	Weissleder <i>et al.</i> , "In vivo imaging of tumors with protease-activated near-infrared fluorescent probes," <i>Nature Biotechnol.</i> , 17:375-378 (1999)	
TS	DL	Wu <i>et al.</i> , "Synthesis and Properties of Adenosine-5'-triphosphoro- γ -1-(5-sulfonic acid)naphthyl Ethylamidate: A Fluorescent Nucleotide Substrate for DNA-Dependent RNA Polymerase from <i>Escherichia coli</i> ," <i>Arch. Biochem. Biophys.</i> , 246:564-567 (1986)	

Examiner Signature	Teresa Stnelechia	Date Considered	5/9/02
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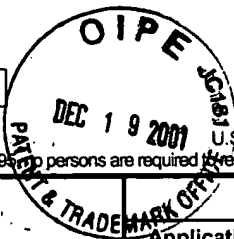
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Application Number	09/876,374 09/876,375
Filing Date	June 6, 2001
First Named Inventor	Williams, John G.K.
Group Art Unit	1637
Examiner Name	Teresa Stuebelia
Attorney Docket Number	020031-000810US

Sheet 8 of 8

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TS	DM	Wu <i>et al.</i> , "An allosteric synthetic DNA," <i>Nucleic Acids Res.</i> , 1512-1516 (1999)	
	DN	Xu <i>et al.</i> , "Long-Range Electrostatic Trapping of Single-Protein Molecules at a Liquid-Solid Interface," <i>Science</i> , 281:1650-1653 (1998)	
✓	DO	Yarbrough <i>et al.</i> , "Synthesis and properties of fluorescent nucleotide substrates for DNA-dependent RNA polymerases," <i>JBC</i> , 254:12069-12073 (1979)	
	DP	Yarbrough <i>et al.</i> , "Stacking Interactions in Fluorescent Nucleotide Analogs Containing 1-Aminonaphthalene-5-Sulfonate at the Phosphoryl Terminus," <i>JBC</i> , 255:9907-9911 (1980)	
	DQ	Yarbrough <i>et al.</i> , "Binding of Fluorescent Analogs of GRP to the Exchangeable Nucleotide Binding Site of Tubulin," <i>JBC</i> , 256:112-117 (1981)	
	DR	Zuckermann <i>et al.</i> , "Efficient methods for attachment of thiol specific probes to the 3'-ends of synthetic oligodeoxyribonucleotides," <i>Nucleic Acids Research</i> , 15: 5305-5321 (1987)	
	DS	Livak <i>et al.</i> , "Oligonucleotides with Fluorescent Dyes at Opposite Ends Provide a Quenched Probe System Useful for Detecting PCR Product and Nucleic Acid Hybridization," <i>PCR Methods and Applications</i> , Cold Spring Harbor Laboratory Press., 4:357-362 (1995)	
	DT	Hunkapiller <i>et al.</i> , "Large-Scale and Automated DNA Sequence Determination," <i>Science</i> , 254:59-67 (1991)	
TS	DU	Griffin, <i>et al.</i> , "Specific Covalent Labeling of Recombinant Protein Molecules Inside Live Cells," <i>Science</i> , 281:269-272 (1998)	

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First Named Inventor	Williams, John G.K.
Group Art Unit	Strzelecka, Theresa
Examiner Name	1656 1637
Attorney Docket Number	020031-000820US

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TS	AA	6,323,186	B1	Klaubert et al.	11/27/01	

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TS	AB	Haugland, "Handbook of Fluorescent Probes and Research Chemicals," <i>Nucleic Acid Detection</i> , 8:143-178 (1996)	

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